United States
Department of
Agriculture

Soil
Conservation
Service

In cooperation with
North Carolina Department of
Natural Resources and
Community Development,
North Carolina Agricultural
Research Service,
North Carolina Agricultural
Extension Service, and
Lee County
Board of Commissioners

Soil Survey of Lee County, North Carolina

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1981. Soil names and descriptions were approved in 1982. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1982. This soil survey was made cooperatively by the Soil Conservation Service and the North Carolina Department of Natural Resources and Community Development, North Carolina Agricultural Research Service, North Carolina Agricultural Extension Service, and Lee County Board of Commissioners. It is part of the technical assistance furnished to the Lee County Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

This soil survey updates the first soil survey of Lee County, which was published in 1933, and provides additional information.

All programs and services of the Soil Conservation Service are offered on a nondiscriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, or handicap.

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Issued September 1989

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Foreword

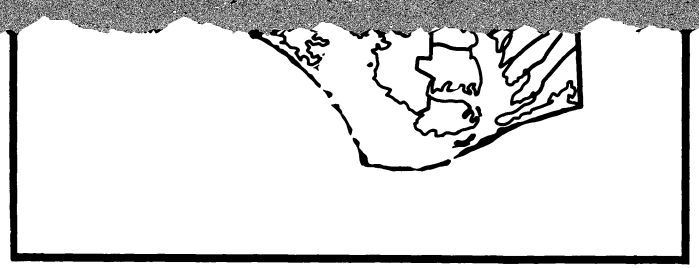
This soil survey contains information that can be used in land-planning programs in Lee County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to insure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Soil Conservation Service or the Cooperative Extension Service.

Bobbye Jack Jones
State Conservationist
Soil Conservation Service



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levels, educational institutions, wholesale and retail outlets, and transportation also contribute substantially to the economy of the county *(10, 12)*.

Business, Industry, and Mining

Lee County has a growing and prosperous economic base representing a variety of manufacturing and industrial enterprises. Sanford is the retail trade center for Lee County and for parts of the surrounding counties. Retail and wholesale establishments bring in more than 300 million dollars annually.

The county has valuable shale deposits used in making brick and clay products and is one of the nation's largest brick-producing centers (fig. 1). One of the largest coal deposits in North Carolina is near Buckhorn Dam in Lee County. Iron ore is also in this area. Coal and iron were mined in the county from Civil War days to the 1930's *(10)*.

Transportation

U.S. Highway 1, which runs from Maine to Florida, passes through the county. Other highways include U.S. Highways 421 and 15-501 and North Carolina Highways 42, 78, and 87 *(13)*. The county is also served by Seaboard Coastline Railroad and Southern Railroad.

Figure 1.—Mayodan soils are removed to expose sediment used in brick production.

Climate

Prepared by the National Climatic Data Center, Asheville, North Carolina.

Lee county is hot and generally humid in summer because of the moist maritime air. Winter is moderately cold but short because the mountains to the west protect the area against many cold waves. Precipitation is quite evenly distributed throughout the year and is adequate for all crops. Every few years late in summer or in autumn, a tropical storm moves inland from the Atlantic Ocean and causes extremely heavy rain for 1 to 3 days.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Moncure, North Carolina, in the period 1951 to 1978. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 40 degrees F, and the average daily minimum temperature is 26 degrees. The lowest temperature on record, which occurred at Moncure, on January 31, 1966, is -4 degrees. In summer the average temperature is 76 degrees, and the average daily maximum temperature is 88 degrees. The highest recorded temperature, which occurred on June 28, 1954, is 107 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 47 inches. Of this, 26 inches, or 55 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 22 inches. The heaviest 1-day rainfall during the period of record was 5.14 inches at Moncure on August 11, 1967. Thunderstorms occur on about 45 days each year, and most occur in summer.

The average seasonal snowfall is 5 inches. The greatest snow depth at any one time during the period of record was 9 inches. On the average, only one day has at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 60 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the southwest. Average windspeed is highest, 9 miles per hour, in spring.

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cause of the scale used in mapping. The inclusions of
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scriptions, especially where the soil pattern was so
mplex that it was impractical to make enough
servations to identify all of the kinds of soils on the
ndscape.

The presence of inclusions in a map unit in no way
minishes the usefulness or accuracy of the soil data.
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Figure 2.—Some woodland sites on Mayodan and Pinkston soils are cleared for use as cropland.

urban development, or it is used as pasture. The rest is woodland. The main limitations for most uses are droughtiness and steepness of slope.

3. Blaney-Gilead-Candor

Nearly level to strongly sloping, well drained, moderately well drained, and somewhat excessively drained soils that have a sandy surface layer and a loamy, clayey, or sandy subsoil; on uplands

These soils are in the southern part of the county. The areas of this map unit typically are irregular in shape. The Gilead part of the map unit is narrow and irregular in shape.

This map unit makes up 13 percent of the county. It is 41 percent Blaney soils, 32 percent Gilead soils, 17 percent Candor soils, and 10 percent soils of minor extent.

The Blaney soils are gently sloping to strongly sloping and well drained. They are on broad ridges and side slopes. The surface layer is loamy sand, and the subsoil is sandy clay loam.

The Gilead soils are gently sloping to strongly sloping and moderately well drained. They are on the more dissected ridges and side slopes in lower positions on the landscape than the Blaney soils. The surface layer is loamy sand, and the subsoil is sandy clay loam and sandy clay.

The Candor soils are nearly level to sloping and somewhat excessively drained. They are on broad ridges. The surface is sand, and the subsoil is loamy sand, sandy loam, and sandy clay loam.

Of minor extent in this map unit are the Wehadkee, Dothan, Fuquay, Tetotum, and Cecil soils. The Wehadkee soils are along intermittent drainageways and are poorly drained. The Dothan and Fuquay soils are on the outer fringes of delineations and are well drained. The Tetotum and Cecil soils are next to drainageways.

The Tetotum soils are moderately well drained, and the Cecil soils are well drained.

About 30 percent of the acreage in this map unit has been cleared and is used for tobacco, soybeans, sweet potatoes, hay, or peach orchards. Some areas are used for pasture or urban development. The rest is woodland. Droughtiness, steepness of slope, and the hazard of erosion are limitations for most uses of these soils.

4. Cecil-Pacolet-Durham

Gently sloping to steep, well drained soils that have a loamy or sandy surface layer and a clayey and loamy subsoil; on uplands

These soils are in the central and eastern parts of the county. The areas of this map unit typically are oblong and irregular in shape.

This map unit makes up 9 percent of the county. It is 49 percent Cecil soils, 25 percent Pacolet soils, 13 percent Durham soils, and 13 percent soils of minor extent.

The Cecil soils are gently sloping to strongly sloping. They are on ridges and smooth side slopes. The surface layer is fine sandy loam, and the subsoil is clay and clay loam.

The Pacolet soils are moderately steep to steep. They are on side slopes. The surface layer is fine sandy loam, and the subsoil is clay loam and clay.

The Durham soils are gently sloping to sloping. They are on broad ridges in transitional areas and between the Cecil soils and adjacent Coastal Plain soils. The surface layer is loamy sand, and the subsoil is sandy clay loam and sandy clay.

Of minor extent in this map unit are the Dothan, Blaney, Wehadkee, and Chewacla soils. The Dothan and Blaney soils are on broad ridges where the Coastal Plain and acid crystalline areas join. The Wehadkee and Chewacla soils are on flood plains of intermittent drainageways.

Most of the acreage of this map unit is woodland. About 15 percent of the acreage has been cleared and is used for tobacco, corn, and soybeans. The rest is used for pasture or urban development. Steepness of slope, surface runoff, and the hazard of erosion are limitations for most uses of these soils.

5. Tatum-Nason

Gently sloping to steep, well drained soils that have a loamy surface layer and a loamy subsoil; on uplands

One part of this map unit is in the northern part of the county between U.S. Highway 1 and Deep River, and the other is in the southeastern part of the county between Lemon Springs and Broadway. The areas of this map unit are oblong, narrow, and irregular in shape.

This map unit makes up 7 percent of the county. It is 45 percent Tatum soils, 39 percent Nason soils, and 16 percent soils of minor extent.

The Tatum soils are gently sloping to steep. They are on broad ridges and steep side slopes. The surface layer is silt loam, and the subsoil is silty clay loam.

The Nason soils are gently sloping to strongly sloping. They are on ridges and side slopes. The surface layer is silt loam, and the subsoil is silty clay loam.

Of minor extent in this map unit are the Mayodan, Pinkston, Dothan, Fuquay, and Wehadkee soils. The Mayodan soils are on ridges, and the Pinkston soils are on side slopes in transitional areas where the two parts of the unit meet. The Dothan and Fuquay soils are also in transitional areas. The Wehadkee soils are on flood plains of drainageways.

Most areas of this map unit are woodland. About 15 percent of the acreage in this map unit has been cleared and is used for corn, soybeans, tobacco, and small grains. The rest is used for pasture or urban development. The hazard of erosion and steepness of slope are limitations for the use of these soils.

6. Creedmoor-White Store

Gently sloping to strongly sloping, moderately well drained and somewhat poorly drained soils that have a loamy surface layer and a clayey and loamy subsoil; on uplands

The largest areas of this map unit are in the northeastern part of the county. The areas of this map unit typically are irregular in shape.

This map unit makes up 7 percent of the county. It is 60 percent Creedmoor soils, 29 percent White Store soils, and 11 percent soils of minor extent.

The Creedmoor soils are gently sloping to strongly sloping, moderately well drained and somewhat poorly drained. They generally are in broad, flat areas. The surface layer is fine sandy loam, and the subsoil is silty clay loam and silty clay.

The White Store soils are gently sloping to strongly sloping and moderately well drained. They are on the higher parts of the landscape and on side slopes. The surface layer is silt loam, and the subsoil is clay and silty clay loam.

Of minor extent in this map unit are the Mayodan, Pinkston, Chewacla, Wehadkee, and Congaree soils. The Mayodan soils are near major slope break areas, and the Pinkston soils are on narrow ridgetops and steeper side slopes than the Creedmoor and White Store soils. The Chewacla, Wehadkee, and Congaree soils are on flood plains of drainageways.

Most areas of this map unit are in woodland. A small acreage has been cleared and is used for soybeans, tobacco, and small grains. The rest is used as pasture. The main limitations for most uses are the hazard of erosion, very slow permeability, and high shrink-swell potential. The major soils in this map unit generally are not used for urban development because of the very slow permeability and high shrink-swell potential.

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This Blaney soil is mainly used as cropland. It is also used as woodland or pasture.

This soil is suited to row crops, particularly if it is irrigated. It is also suited to hay and pasture. Leaching of plant nutrients, low available water capacity, and runoff are the main limitations. Wind erosion is a hazard. Conservation tillage, cover crops, residue management, and contour tillage reduce runoff and help control erosion.

The dominant trees on this soil are loblolly pine, hickory, white oak, and southern red oak. The understory includes flowering dogwood, sassafras, greenbrier, red maple, and sourwood. The main limitation for woodland use is droughtiness.

This soil is suited to most urban and recreational uses. Droughtiness and moderately slow permeability of the subsoil are the main limitations.

This Blaney soil is in capability subclass IIIs. The woodland ordination symbol is 3s.

BaD—Blaney loamy sand, 8 to 15 percent slopes. This soil is well drained and is in interstream areas and on toe slopes in the Sandhill Region. The areas of this soil are elongated and irregular in shape and range from 5 to over 100 acres.

Typically, the surface layer is dark grayish brown loamy sand 3 inches thick. The subsurface layer to a depth of 28 inches is light yellowish brown loamy sand. The subsoil to a depth of 49 inches is yellowish brown sandy clay loam. The underlying material to a depth of 60 inches is mottled brownish yellow, strong brown, light gray sandy loam that has pockets of sandy clay loam.

The permeability is rapid in the surface and subsurface layers and moderately slow in the subsoil. The available water capacity is low. This soil ranges from very strongly acid to medium acid in the surface and subsurface layers and is very strongly acid or strongly acid in the subsoil.

Included with this soil in mapping are small areas of Fuquay, Dothan, Gilead, and Vaucluse soils. Fuquay and Dothan soils are in areas that have slopes of about 8 percent. Gilead soils are in lower-lying parts of the area. Vaucluse soils are south of Broadway in landscape positions similar to those of the Blaney soil.

This Blaney soil is mainly used as woodland or pasture. In some areas, it is used as cropland.

This soil is poorly suited to row crops and small grains. It is suited to hay and pasture. Leaching of plant nutrients, steepness of slope, low available water capacity, and runoff are the main limitations. Erosion is a hazard if this soil is cultivated. Conservation tillage, cover crops, crop residue management, and contour tillage reduce runoff and help control erosion.

The dominant trees on this soil are loblolly and longleaf pines. The understory includes flowering dogwood, sassafras, greenbrier, red maple, and sourwood. Droughtiness and steepness of slope are the main limitations for woodland use.

This soil is suited to most urban and recreational uses. Droughtiness, steepness of slope, and moderately slow permeability of the subsoil are the main limitations. This soil is poorly suited to light industry because of the steepness of slope.

This Blaney soil is in capability subclass IVs. The woodland ordination symbol is 3s.

CaB—Candor sand, 0 to 8 percent slopes. This soil is somewhat excessively drained and is in broad interstream areas and on rounded side slopes in the Sandhill Region. The areas of this soil are large and irregular in shape and range from 5 to more than 100 acres.

Typically, the surface layer is brown sand 9 inches thick. The subsurface layer to a depth of 25 inches is light yellowish brown sand. The upper part of the subsoil to a depth of 35 inches is yellowish brown loamy sand. The next layer is very pale brown sand. The lower part of the subsoil to a depth of 94 inches is yellowish brown sandy loam, strong brown sandy clay loam, and red sandy loam. The underlying material to a depth of 99 inches is light red sandy loam.

Permeability is rapid or very rapid in the sandy surface layer and subsoil and moderate below that. The available water capacity is low. This soil is very strongly acid or strongly acid except where lime has been added.

Included with this soil in mapping are small areas of Blaney soils. These soils are slightly lower on the landscape than the Candor soil.

About half the acreage of the Candor soil is cropland. The rest is woodland, pasture, or in use for subdivisions and golf courses.

This soil is poorly suited to most crops; however, corn, tobacco, and soybeans are grown. Droughtiness and leaching of plant nutrients are the main limitations, and wind erosion is a hazard. Conservation tillage, cover crops, crop residue management, and windbreaks help control wind erosion and reduce leaching.

The dominant trees on this soil are loblolly pine, longleaf pine, hickory, southern red oak, post oak, blackjack oak, and turkey oak. The understory includes pineland threeawn, sweetgum, black oak, flowering dogwood, and sassafras. The sandy surface material is the main limitation for woodland use.

This soil is suited to most urban uses. Seepage and caving of trench banks are the main limitations. Because of droughtiness and the leaching of plant nutrients, lawns and shrubs are difficult to establish and maintain in some areas. Watering the plants and adding plant nutrients help overcome these limitations. This soil is poorly suited to recreational uses because of droughtiness.

This Candor soil is in capability subclass IVs. The woodland ordination symbol is 3s.

CfB—Cecil fine sandy loam, 2 to 8 percent slopes. This soil is well drained and is in narrow to broad, smooth interstream areas on Piedmont uplands. The areas of this soil are oblong and range from 5 to 200 acres.

Typically, the surface layer is yellowish red fine sandy loam 6 inches thick. The subsoil extends to a depth of 60 inches. The upper part is red clay, and the lower part is red clay loam. The underlying material to a depth of 70 inches is mottled red, strong brown, and pale brown saprolite that crushes to sandy loam.

Permeability is moderate, and available water capacity is moderate. Except where lime has been added, this soil ranges from very strongly acid to medium acid in the surface layer and is very strongly acid or strongly acid in the subsoil.

Included with this soil in mapping are small intermingled areas of Durham soils that have a loamy sand surface layer and a brown, less clayey subsoil than that of the Cecil soil.

This Cecil soil is mainly used as cropland. In some areas, it is used for hay, pasture, or as woodland.

This soil is suited to corn, soybeans, tobacco, small grains, and horticultural crops. Steepness of slope is the main limitation, and erosion is a hazard. Conservation tillage, cover crops, crop residue management, and contour tillage reduce runoff and help control erosion.

The dominant trees on this soil are hickory, white oak, black oak, northern red oak, southern red oak, sweetgum, loblolly pine, Virginia pine, and shortleaf pine. The understory includes flowering dogwood, red maple, sourwood, eastern redcedar, American holly, redbud, black cherry, pin oak, and sassafras.

This soil is well suited to most urban and recreational uses. Moderate permeability is a limitation for septic tank absorption fields.

This Cecil soil is in capability subclass IIe. The woodland ordination symbol is 3o.

CfD—Cecil fine sandy loam, 8 to 15 percent slopes. This soil is well drained and is on narrow side slopes on Piedmont uplands. The areas are oblong and range from 5 to 50 acres.

Typically, the surface layer is yellowish red fine sandy loam 6 inches thick. The subsoil extends to a depth of 60 inches. The upper part is red clay, and the lower part is red clay loam. The underlying material to a depth of 70 inches is mottled red, strong brown, and pale brown sandy loam.

Permeability is moderate, and the available water capacity is moderate. This soil ranges from very strongly acid to medium acid in the surface layer and is very strongly acid or strongly acid in the subsoil.

Included with this soil in mapping are small intermingled areas of Durham soils that have a loamy sand surface layer and brown, less clayey subsoil than that of the Cecil soil. Also included are small areas of Pacolet soils on steeper slopes.

This Cecil soil is mainly used as woodland. In some areas, it is used as cropland or pasture.

This soil is suited to corn, soybeans, tobacco, small grains, and horticultural crops. Steepness of slope is the main limitation, and erosion is a hazard. Conservation tillage, cover crops, crop residue management, and contour tillage reduce runoff and help control erosion.

The dominant trees on this soil are hickory, white oak, black oak, southern red oak, sweetgum, loblolly pine, Virginia pine, and shortleaf pine. The understory includes flowering dogwood, red maple, sourwood, eastern redcedar, American holly, redbud, black cherry, pin oak, and sassafras.

This soil is suited to most urban uses. Steepness of slope and moderate permeability are the main limitations. This soil is suited to recreational uses, but steepness of slope is a limitation.

This Cecil soil is in capability subclass IVe. The woodland ordination symbol is 3o.

Ch—Chewacla silt loam. This soil is nearly level and is somewhat poorly drained. It is on flood plains along major streams. The areas of this soil are long and narrow and range from 5 to 200 acres.

Typically, the surface layer is brown silt loam 6 inches thick. The subsoil extends to a depth of 46 inches. It is brown silty clay loam in the upper and middle parts and pinkish gray loam in the lower part. The underlying material to a depth of 60 inches is light brownish gray sandy loam.

Permeability is moderate, and the available water capacity is high. This soil ranges from strongly acid to slightly acid except where lime has been added. The seasonal high water table is 0.5 foot to 1.5 feet below the surface in winter and early in spring. This soil is frequently flooded for brief periods.

Included with this soil in mapping are small areas of Congaree and Wehadkee soils. Congaree soils are along stream channels and are well drained to moderately well drained. Wehadkee soils are along toe slopes next to the adjacent uplands and are poorly drained.

This Chewacla soil is mainly used as woodland. Only a small acreage has been cleared and is used for crops or pasture.

If this soil is protected from flooding, it is well suited to cultivated crops, such as corn and soybeans. Conservation tillage, cover crops, and crop residue management reduce runoff and help control erosion. This soil is well suited to pasture; however, flooding is a hazard.

The dominant trees on this soil are yellow poplar, sweetgum, willow oak, black oak, red maple, sycamore, white ash, hickory, water oak, white oak, southern red oak, American beech, and loblolly pine. The understory

includes flowering dogwood, sourwood, sassafras, and American holly.

This soil is poorly suited to most urban and recreational uses because of wetness and flooding.

This Chewacla soil is in capability subclass IVw. The woodland ordination symbol is 1w.

Cp—Congaree silt loam. This soil is nearly level and well drained to moderately well drained. It is adjacent to streams on flood plains. The areas of this soil are long and narrow and range from 5 to 50 acres.

Typically, the surface layer is dark brown silt loam 9 inches thick. The underlying material to a depth of 80 inches is brown loam in the upper part, strong brown fine sandy loam and sandy loam in the middle part, and yellowish red sandy loam in the lower part.

Permeability is moderate, and the available water capacity is moderate. Surface runoff is slow. This soil ranges from very strongly acid to neutral except where lime has been added. The seasonal high water table is at a depth of 2.5 to 4 feet late in winter and early in spring. The soil is flooded frequently for brief periods.

Included with this soil in mapping are small areas of Chewacla and Wehadkee soils. Chewacla soils are on the flood plain between the Congaree soil and the Wehadkee soils, which are in lower positions on the flood plain than the Congaree soil.

This Congaree soil is mainly used as woodland. Small acreages are used as cropland or pasture.

This soil is well suited to most crops; however, flooding is a hazard. The main crops are corn, soybeans, and small grains. Conservation tillage, cover crops, and crop residue management reduce runoff and help control erosion. This soil is well suited to hay and pasture forage.

The dominant trees on this soil are yellow poplar, sweetgum, willow oak, black oak, red maple, sycamore, white ash, hickory, water oak, white oak, southern red oak, American beech, and loblolly pine. The understory includes flowering dogwood, sourwood, sassafras, and American holly.

This soil is poorly suited to most urban and recreational uses because of flooding.

This Congaree soil is in capability subclass IIIw. The woodland ordination symbol is 1o.

CrB—Creedmoor fine sandy loam, 2 to 8 percent slopes. This soil is moderately well drained and somewhat poorly drained. It is on ridges on Piedmont uplands. The areas of this soil are irregular in shape and range from 5 to 200 acres.

Typically, the surface layer is yellowish brown fine sandy loam 14 inches thick. The subsoil extends to a depth of 42 inches. The upper part is brownish yellow silty clay loam, the middle part is light gray silty clay, and the lower part is mottled brownish yellow, yellowish red, and strong brown silty clay. The next layer to a depth of 56 inches is red clay loam. The underlying material to a depth of 96 inches is dark red loam or silt loam.

Permeability is moderately rapid in the surface layer and very slow in the clayey subsoil. The available water capacity is moderate, and shrink-swell potential is moderate. This soil is very strongly acid or strongly acid except where lime has been added. The seasonal high water table is 1.5 to 2 feet below the surface during wet seasons.

Included with this soil in mapping are Mayodan and White Store soils. The included soils are in higher positions on the landscape and in better drained areas than the Creedmoor soil.

This Creedmoor soil is mainly used as woodland. In some areas, it is used for cultivated crops or pasture.

This soil is well suited to most cultivated crops grown in the area. It is mainly used for corn, soybeans, small grains, and pasture plants. Runoff, erosion, and wetness are the main limitations. Conservation tillage, cover crops, crop residue management, and contour tillage reduce runoff and help control erosion.

The dominant trees on this soil are loblolly pine, shortleaf pine, water oak, white oak, red oak, sweetgum, and red maple. The understory includes flowering dogwood, greenbrier, redbud, sourwood, and winged elm. Wetness is the main limitation for woodland use.

This soil is poorly suited to urban and recreational uses. Very slow permeability, wetness, and moderate shrink-swell potential are the main limitations.

This Creedmoor soil is in capability subclass IIe. The woodland ordination symbol is 3w.

CrD—Creedmoor fine sandy loam, 8 to 15 percent slopes. This soil is moderately well drained and somewhat poorly drained. It is along side slopes on Piedmont uplands. The areas of this soil are irregular in shape and range from 5 to 50 acres.

Typically, the surface layer is yellowish brown fine sandy loam 14 inches thick. The subsoil extends to a depth of 56 inches. The upper part is brownish yellow silty clay loam, the middle part is light gray silty clay, and the lower part is mottled brownish yellow, yellowish red, and strong brown silty clay. The underlying material to a depth of 96 inches is dark red loam or silt loam.

Permeability is moderately rapid in the surface layer and very slow in the subsoil. The available water capacity is moderate, and shrink-swell potential is moderate. This soil is very strongly acid or strongly acid except where lime has been added. The seasonal high water table is 1.5 to 2 feet below the surface during wet periods.

Included with this soil in mapping are Mayodan, White Store, and Pinkston soils. These soils are intermingled throughout the map unit in higher positions on the landscape than the Creedmoor soil.

Nearly all of this Creedmoor soil is used as woodland. It is used as pasture in a few areas.

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Figure 3.—Irrigation improves tobacco crops on Fuquay loamy sand, 0 to 6 percent slopes.

brown sandy clay loam, the middle part is brownish yellow sandy clay, and the lower part is light gray sandy clay loam. The underlying material to a depth of 75 inches is light gray clay.

Permeability is moderately slow or slow, and the available water capacity is moderate. This soil is very strongly acid or strongly acid throughout. A perched high water table is above the clayey horizons for short periods during wet seasons.

Included with this soil in mapping are areas of similar soils that have a sandy loam surface layer and small areas of Blaney soils that are along the edge of delineations in slightly higher positions on the landscape.

This Gilead soil is mainly used as woodland. Small acreages are used for pasture or hay.

Only a small acreage of this soil is cultivated or in pasture. The main crops are corn, small grains, and soybeans. Steepness of slope is the main limitation, and erosion is a hazard. Conservation tillage, cover crops, crop residue management, and contour tillage reduce runoff and help control erosion.

The dominant trees on this soil are loblolly pine, longleaf pine, blackgum, and sweetgum. The understory includes post oak, blackjack oak, honeysuckle, flowering dogwood, bluestem, and panicum.

The soil is poorly suited to most urban and recreational uses because of wetness, steepness of slope, and moderately slow or slow permeability. Low strength is a limitation for local roads and streets.

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Figure 4.—Pinkston silt loam, 8 to 15 percent slopes, is underlain by bedrock at a depth of 20 to 40 inches. In a few places, bedrock is at a depth of less than 20 inches.

Included with this soil in mapping are small areas of Mayodan and Creedmoor soils. Mayodan soils generally are higher on the landscape than the Pinkston soil, and Creedmoor soils are on benches adjacent to steeper side slopes. Also included are a few small areas of soils that have bedrock at a depth of less than 20 inches.

This Pinkston soil is mainly used as woodland. It is used as pasture or cropland in some areas.

This soil is poorly suited to use as cropland. Steepness of slope and depth to bedrock are the main limitations, and erosion is a hazard. This soil is suited to hay and pasture forage. Proper pasture management reduces runoff and helps control erosion.

The dominant trees on this soil are northern red oak, Virginia pine, loblolly pine, yellow poplar, white oak, southern red oak, hickory, red maple, and American beech. The understory includes flowering dogwood, sourwood, redbud, black cherry, eastern redcedar, and sassafras. Steepness of slope and depth to bedrock are the main limitations for woodland use.

This soil is poorly suited to most urban and recreational uses because of steepness of slope and depth to bedrock.

This Pinkston soil is in capability subclass IVe. The woodland ordination symbol is 4d.

PfF—Pinkston silt loam, 15 to 40 percent slopes. This soil is well drained and is on side slopes adjacent to major drainageways on Piedmont uplands. The areas of this soil are long and narrow and range from 5 to 200 acres.

Typically, the surface layer is brown silt loam 6 inches thick. The subsoil extends to a depth of 16 inches. The upper part is brown silt loam, and the lower part is light brown silt loam. The underlying material to a depth of 36 inches is reddish brown silt loam.

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Figure 5.—The soil is being removed to expose bedrock in this stone quarry at Lemon Springs.

American holly, flowering dogwood, greenbrier, and blueberry.

This soil is suited or poorly suited to most urban uses because of wetness and low strength. It is well suited to recreational uses.

This State soil is in capability class I. The woodland ordination symbol is 1o.

TaB—Tatum silt loam, 2 to 8 percent slopes. This soil is well drained and is on Piedmont uplands on broad ridges that are dissected by intermittent drainageways. The areas of this soil are oblong and irregular in shape and range from 5 to 200 acres.

Typically, the surface layer is brown silt loam 8 inches thick. The subsoil extends to a depth of 50 inches. It is red silty clay loam. The underlying material to a depth of 60 inches is mottled red and brownish yellow saprolite that crushes to silt loam.

Permeability is moderate, and the available water capacity is moderate. Shrink-swell potential is moderate. This soil is very strongly acid or strongly acid except where lime has been added. Soft bedrock is at a depth of 40 to 60 inches.

Included with this soil in mapping are small areas of Nason soils. These soils are intermingled with the Tatum soil throughout the map unit.

This Tatum soil is mainly used as woodland. In some areas, it is used for hay, pasture, crops, or urban development.

This soil is well suited to corn, soybeans, pasture, hay, small grains, and horticultural crops. Surface runoff is the main limitation, and erosion is a hazard. Conservation

tillage, cover crops, contour tillage, and crop residue management reduce runoff and help control erosion.

The dominant trees on this soil are loblolly pine, shortleaf pine, Virginia pine, yellow poplar, hickory, white oak, southern red oak, sweetgum, and post oak. The understory includes flowering dogwood, sourwood, American holly, eastern redcedar, black cherry, red maple, and sassafras.

This soil is suited to most urban uses. Moderate shrink-swell potential and depth to bedrock are limitations. This soil is well suited to recreational uses.

This Tatum soil is in capability subclass IIe. The woodland ordination symbol is 3o

TaD—Tatum silt loam, 8 to 15 percent slopes. This soil is well drained and is on side slopes on Piedmont uplands. The areas of this soil are oblong and range from 4 to more than 60 acres.

Typically, the surface layer is brown silt loam 8 inches thick. The subsoil extends to a depth of 50 inches. It is red silty clay loam. The underlying material to a depth of 60 inches is mottled red and brownish yellow saprolite that crushes to silt loam.

Permeability is moderate, and the available water capacity is moderate. Shrink-swell potential is moderate. This soil is very strongly acid or strongly acid except where lime has been added. Soft bedrock is at a depth of 40 to 60 inches.

Included with this soil in mapping are small areas of Nason soils.

This Tatum soil is mainly used as woodland. In some areas, it is used for hay, pasture, crops, or urban development.

Tatum soil is well suited to corn, soybeans, pasture, hay, small grains, and horticultural crops. Steepness of slope and surface runoff are the main limitations, and erosion is a hazard. Conservation tillage, cover crops, contour tillage, and crop residue management reduce runoff and help control erosion.

The dominant trees on this soil are loblolly pine, shortleaf pine, yellow poplar, hickory, white oak, southern red oak, sweetgum, and post oak. The understory includes flowering dogwood, sourwood, American holly, eastern redcedar, black cherry, red maple, and sassafras.

This soil is suited to most urban and recreational uses. Steepness of slope, moderate shrink-swell potential, and moderate permeability are the main limitations.

This Tatum soil is in capability subclass IIIe. The woodland ordination symbol is 3o.

TaE—Tatum silt loam, 15 to 30 percent slopes. This soil is well drained and is on side slopes on Piedmont uplands. The areas of this soil are oblong and range from 5 to more than 80 acres.

Typically, the surface layer is brown silt loam 8 inches thick. The subsoil extends to a depth of 50 inches. It is red silty clay loam. The underlying material to a depth of 60 inches is mottled red and brownish yellow saprolite that crushes to silt loam.

Permeability is moderate, and the available water capacity is moderate. Shrink-swell potential is moderate. This soil is very strongly acid or strongly acid. Soft bedrock is at a depth of 40 to 60 inches.

Included with this soil in mapping are small areas of a soil that has a channery silt loam surface layer. Also included are areas of Nason soils.

This Tatum soil is mainly used as woodland. In some areas, it is used as pasture.

This soil is poorly suited to use as cropland. Steepness of slope is the main limitation, and erosion is a hazard. This soil is suited to pasture and hay. Proper pasture management reduces runoff and helps to control erosion.

The dominant trees on this soil are loblolly pine, shortleaf pine, yellow poplar, hickory, white oak, southern red oak, and sweetgum. The understory includes flowering dogwood, sourwood, American holly, eastern redcedar, black cherry, red maple, and blackgum. Steepness of slope and the hazard of erosion are concerns in managing this soil for timber production.

This soil is poorly suited to most urban and recreational uses because of steepness of slope and moderate permeability.

This Tatum soil is in capability subclass IVe. The woodland ordination symbol is 3r.

ToB—Tetotum fine sandy loam, 1 to 4 percent slopes. This soil is moderately well drained and is on low ridges on stream terraces. The areas of this soil are irregular in shape and range from 4 to 100 acres.

Typically, the surface layer is brown fine sandy loam 7 inches thick. The subsoil extends to a depth of 55 inches. The upper part is light yellowish brown silty clay loam, the middle part is brownish yellow silty clay loam and clay loam, and the lower part is light yellowish brown clay loam and light gray sandy clay loam. The underlying material to a depth of 60 inches is light gray sandy loam.

Permeability is moderate, and the available water capacity is high. This soil ranges from extremely acid to strongly acid except where lime has been added. The high water table is 1.5 to 2.5 feet below the surface during winter.

Included with this soil in mapping are small areas of State and Wickham soils. These soils are well drained and are slightly higher on the landscape than the Tetotum soil.

About half the acreage of this Tetotum soil is in cultivated crops or pasture. The rest is mainly woodland.

This soil is well suited to corn, soybeans, and small grains. Wetness and susceptibility to erosion are the main limitations. Conservation tillage, cover crops, and crop residue management reduce runoff and help control erosion. Artificial drainage is needed for most crops.

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d ordination symbol is 4c.

–Wickham sandy loam, 2 to 8 percent
This soil is well drained and is on low ridges on
errraces. The areas of this soil are oblong and
m 5 to 50 acres.
lly, the surface layer is reddish brown sandy
nches thick. The subsoil to a depth of 52 inches
ndy clay loam. The underlying material to a
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ability is moderate, and the available water
is moderate. This soil ranges from very strongly
nedium acid except where lime has been added.
ed with this soil in mapping are small areas of
d Tetotum soils. State soils are on the outer
delineations in slightly lower positions on the
e. Tetotum soils are moderately well drained
intermingled with the Wickham soil in long,
epressions and in nearly level areas.
/ickham soil is mainly used as cropland. In some
is used for hay or pasture. A very small acreage
and.
oil is well suited to corn, soybeans, tobacco, and
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at are cultivated. Conservation tillage, cover
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unoff and help control erosion.
ominant trees on this soil are loblolly pine, yellow
ickory, white oak, and southern red oak. The
ry includes red maple, flowering dogwood,
n elm, sassafras, redbud, and sourwood.
il is well suited to most urban and recreational

/ickham soil is in capability subclass IIe. The
d ordination symbol is 2o.

favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not subject to frequent flooding during the growing season. The slope ranges mainly from 0 to 6 percent.

About 52,228 acres, or 31 percent of Lee County, meets the requirement for prime farmland. The areas of prime farmland are scattered throughout the county but are mainly in map units 1, 2, 3, 5, and 8 on the general soil map. Some loss of prime farmlands to industrial and urban uses has occurred in recent years.

The following map units, or soils, make up prime farmland in Lee County. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 4. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

Soils that have limitations, such as a high water table or flooding, may qualify as prime farmland if these limitations are overcome by such measures as drainage or flood control. In the following list, the measures needed to overcome the limitations of a map unit, if any, are shown in parentheses after the map unit name. Onsite evaluation is necessary to determine if the limitations have been overcome by the corrective measures.

CfB Cecil fine sandy loam, 2 to 8 percent slopes
CrB Creedmoor fine sandy loam, 2 to 8 percent slopes
DoA Dothan loamy sand, 0 to 2 percent slopes
DoB Dothan loamy sand, 2 to 8 percent slopes
DuB Durham loamy sand, 2 to 8 percent slopes
MfB Mayodan fine sandy loam, 2 to 8 percent slopes
NaB Nason silt loam, 2 to 8 percent slopes
StA State fine sandy loam, 0 to 3 percent slopes
TaB Tatum silt loam, 2 to 8 percent slopes
ToB Tetotum fine sandy loam, 1 to 4 percent slopes
WwB Wickham sandy loam, 2 to 8 percent slopes

ained; and the estimated
hay and pasture plants are

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t potatoes on 100 acres; and
ning 1,500 acres. Pasture
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on about 60 percent of the
county *(11)*. This concern is
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n is a hazard in some areas
ey, Gilead, Cecil, Durham,
n soils.

vity and soil tilth decrease as
away. Costly herbicides,
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matter if erosion is not
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cultural control of erosion
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provide protective surface
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educe erosion by intercepting
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Figure 6.—Coastal bermudagrass hay is one of the major crops in Lee County. This hay crop is on Blaney loamy sand, 2 to 8 percent slopes.

tall fescue, provide safe disposal areas for surplus field water runoff. Field borders also help filter sediment-laden runoff. These conservation practices are practical and highly effective on uniform slope patterns of Dothan, Fuquay, Blaney, Mayodan, Tatum, and Nason soils.

Contour tillage and stripcropping are also effective conservation practices on many Lee County soils. Like terraces and diversions, these practices are most effective on soils that have more uniform slopes, but they can be adapted to a wide range of slope patterns. Conservation tillage, including minimum tillage, reduced tillage, and no-till, is also effective in controlling erosion on these soils.

In many areas of the Mayodan, Creedmoor, Vaucluse, Nason, and Cecil soils, slopes are so short and irregular that contour tillage and parallel terraces are not practical. On these soils, it is imperative to use effective conservation cropping systems that have substantial plant cover to control erosion.

Information for the design and applicability of erosion control practices for each kind of soil can be obtained from the local Soil Conservation Service offices.

Soil tilth is an important factor in crop production. Seed germination and water infiltration into the soil is highly influenced by soil tilth. Soils that have good tilth have a granular and porous surface layer.

Most of the soils in Lee County have a loamy sand, sandy loam, or fine sandy loam surface layer that is low in organic matter content. Tatum, Nason, Pinkston, and White Store soils, which have a finer textured surface layer of silt loam, are prone to "crusting" after intense rainfalls. Some other soils that have a very fine sandy loam surface layer or an eroded surface are also prone to crusting. Plant cover, crop residue, manure, and mulches that protect the surface from the direct impact of raindrops reduce crusting and improve soil structure and general soil tilth.

A compacted traffic pan can form between the topsoil and the subsoil in the Dothan, Blaney, Nason, State, Tetotum, and Wickham soils. Traffic pans reduce infiltration, root penetration, and permeability. The hazard of erosion is more severe on sloping soils that have a traffic pan. Conservation tillage systems that use rippers, subsoilers, and chisels can effectively reduce the

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Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer, stone content, soil texture, and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, and shrink-swell potential can cause the movement of footings. Depth to a high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, depth to a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, depth to a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of sodium affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 13 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 13 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and that good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, depth to a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 13 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and

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fected by depth to bedrock or to a cemented pan, stones, slope, and the hazard of cutbanks caving. bility of drainage outlets is not considered in the s.

ation is the controlled application of water to ement rainfall and support plant growth. The design anagement of an irrigation system are affected by to the water table, the need for drainage, flooding, ble water capacity, intake rate, permeability, n hazard, and slope. The construction of a system cted by large stones and depth to bedrock or to a nted pan. The performance of a system is affected depth of the root zone, the amount of sodium, oil reaction.

aces and diversions are embankments or a nation of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area, or from nearby areas, and on field examination.

Physical and Chemical Properties

Table 17 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of movement of water through the soil when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage in each major soil layer is stated in inches of water per inch of soil. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average annual rate of soil loss by sheet and rill erosion. Losses are expressed in tons per acre per year. These estimates are based primarily on percentage of silt, sand, and organic matter (up to 4 percent) and on soil structure and permeability. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons per acre per year.

Soil and Water Features

Table 18 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have high shrink-swell potential, soils

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A—T 99 (AASHTO), D

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rmed in moderately
ge from 2 to 15

d, 2 to 8 percent
ounty line on U.S.
hile southeast on
, 0.4 mile northeast

common in the lower part of the Bt horizon or in the BC horizon.

The C horizon is mottled in shades of red, brown, gray, or white. It is saprolite that crushes to sandy loam.

Chewacla Series

The Chewacla series consists of somewhat poorly drained soils on flood Plains. These soils formed in recent alluvium. Slopes are less than 2 percent.

Typical pedon of Chewacla silt loam; 1.8 miles northwest of Sanford, 0.4 mile northwest of the intersection of U.S. Highway 15-501 and U.S. Highway 421, 0.4 mile southeast of the intersection of U.S. Highway 421 and State Road 1328, 200 feet south of U.S. Highway 421:

A—0 to 6 inches; brown (7.5YR 5/4) silt loam; few fine distinct strong brown (7.5YR 5/6) and light brown (7.5YR 6/4) mottles; weak medium granular structure; very friable; common fine roots; few fine flakes of mica; strongly acid; clear smooth boundary.

Bw1—6 to 17 inches; brown (7.5YR 5/4) silty clay loam; common fine distinct strong brown (7.5YR 5/8) mottles and few fine distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; few fine roots; few fine flakes of mica; strongly acid; gradual wavy boundary.

Bw2—17 to 26 inches; brown (7.5YR 5/4) silty clay loam; few fine distinct yellowish red (5YR 5/8), strong brown (7.5YR 5/8), and pinkish gray (7.5YR 6/2) mottles; few fine flakes of mica; strongly acid; gradual wavy boundary.

Bg—26 to 46 inches; pinkish gray (7.5YR 6/2) loam; common coarse distinct brown (7.5YR 5/4) mottles and few fine distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; very friable; few fine flakes of mica; strongly acid; gradual wavy boundary.

Cg—46 to 60 inches; light brownish gray (10YR 6/2) sandy loam; common fine distinct yellowish brown (10YR 5/6) mottles and few fine distinct brown (7.5YR 5/4) mottles; massive; very friable; few fine flakes of mica; strongly acid.

The loamy horizons range from 36 to more than 72 inches in thickness. The Chewacla soils range from strongly acid to slightly acid except where lime has been added. Dark concretions are common in some pedons, and few to common flakes of mica are throughout some profiles.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 to 4.

The upper part of the B horizon has hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8. The lower part of the B horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 1 to 8. Mottles in chroma of 2 or

eries

y series consists of well drained soils on uplands. These soils formed in moderately ed sediment. Slopes range from 0 to 6

on of Fuquay loamy sand, 0 to 6 percent northwest of Lemon Springs, 0.2 mile east ction of State Road 1159 and State Road southwest of State Road 1159, in a field:

ches; dark grayish brown (10YR 4/2) loamy ak fine granular structure; very friable; fine roots; slightly acid; clear smooth

ches; light yellowish brown (2.5Y 6/4) nd; few fine faint strong brown mottles; granular structure; very friable; slightly r wavy boundary.

inches; light olive brown (2.5Y 5/6) sandy fine distinct light yellowish brown (2.5Y les; weak fine subangular blocky structure; ry strongly acid; gradual wavy boundary.

inches; yellowish brown (10YR 5/8) sandy ; moderate medium subangular blocky friable, slightly sticky and slightly plastic; ct clay films on faces of peds; very cid; gradual wavy boundary.

inches; brownish yellow (10YR 6/6) sandy ; common medium prominent yellowish red) mottles and few fine distinct yellowish YR 5/6) mottles; moderate medium r blocky structure; firm, slightly sticky and astic; few distinct clay films on faces of mmon brittle plinthite nodules; very strongly ual wavy boundary.

inches; mottled yellowish red (5YR 5/8) nish yellow (10YR 6/6) sandy clay loam; medium subangular blocky structure; firm, cky and slightly plastic; few distinct clay aces of peds; few brittle plinthite nodules; gly acid; gradual wavy boundary.

inches; mottled yellowish red (5YR 5/8), yellow (10YR 6/6), light gray (10YR 7/2), .5YR 4/6) sandy clay loam; moderate ubangular blocky structure; firm; few ay films on faces of peds; common brittle odules; very strongly acid; gradual wavy

inches; mottled yellowish red (5YR 5/8), yellow (10YR 6/6), gray (10YR 6/1), light R 7/2), and red (2.5YR 4/6) sandy clay a of sandy loam; weak coarse subangular ucture; firm; common brittle plinthite ery strongly acid.

silty clay, silty clay loam, clay,

f 10R to 7.5YR, value of 3 to
is weathered saprolite of
hat crushes to loam, clay

ts of well drained soils on
oils formed in moderately fine
ed from metamorphic rocks.
percent.
silt loam, 2 to 8 percent
e intersection of State Roads
uthwest of the intersection of
Road 1423, 50 feet
-33, in a field:

n brown (10YR 5/4) silt loam;
structure; very friable;
fine rock fragments; slightly
ndary.
ish brown (10YR 5/6) silty
e distinct strong brown
eak fine subangular blocky
ne roots; few fine rock
y films on faces of peds;
avy boundary.
g brown (7.5YR 5/8) silty
nct brownish yellow (10YR
(5YR 5/8) mottles; moderate
cky structure; friable, slightly
c; 10 percent, by volume,
tinct clay films on faces of
dual wavy boundary.
g brown (7.5YR 5/8) silty
dium prominent red (2.5YR
w (10YR 6/6) mottles;
ngular blocky structure;
d slightly plastic; 10 percent,
nts; few distinct clay films on
ngly acid; gradual wavy

d strong brown (7.5YR 5/8),
S/6), red (2.5YR 4/8), and
t loam, strata of silty clay
0 percent, by volume, rock
acid; gradual wavy

d red (2.5YR 4/8), brownish
g brown (7.5YR 5/8), and
prolite that crushes to silt

nches; mottled red (2.5YR 4/6) and
yellow (10YR 6/6) saprolite that crushes to
massive with obvious bedding planes; very
acid.

zon ranges from 30 to 50 inches in
e Tatum soils are very strongly acid or
except where lime has been added. Few
a are in some pedons.
p horizon has hue of 7.5YR or 10YR, value
chroma of 2 to 4.
ns have an E horizon that has hue of
R, value of 5 or 6, and chroma of 3 to 6. It
am, or very fine sandy loam.
zon has hue of 10R or 2.5YR, value of 4 or
a of 6 to 8. It is silty clay loam, silty clay, or

on is mottled red, brownish yellow, or white
crushes to silt loam.

eries

m series consists of moderately well
on stream terraces. These soils formed in
ne textured fluvial sediment. Slopes range
ercent.
on of Tetotum fine sandy loam, 1 to 4
s; 2.3 miles southeast of the intersection of
1 and State Road 1466 where State Road
s State Road 1500 and intersects with
002, 1.4 miles southeast of the intersection
1 1500 and State Road 1002, 25 feet
State Road 1500, in a field:

ches; brown (10YR 5/3) fine sandy loam;
dium granular structure; very friable;
fine roots; slightly acid; clear smooth

inches; light yellowish brown (10YR 6/4)
loam; common medium faint pale brown
3) mottles; weak fine subangular blocky
friable; few faint clay films on faces of
htly acid; gradual wavy boundary.
inches; brownish yellow (10YR 6/6) silty
; few fine distinct light yellowish brown
4) mottles; weak fine subangular blocky
friable, slightly sticky and slightly plastic;
ct clay films on faces of peds; slightly acid;
avy boundary.
inches; brownish yellow (10YR 6/6) clay
mon fine distinct reddish yellow (7.5YR
les and few fine distinct light gray (10YR
les; moderate medium subangular blocky
friable, slightly sticky and slightly plastic;
ct clay films on faces of peds; strongly
ual wavy boundary.

e Store Series

e White Store series consists of moderately well
ed soils on uplands. These soils formed in fine
ed residuum weathered from Triassic rocks. Slopes
from 2 to 15 percent.

ical pedon of White Store silt loam, 2 to 8 percent
s; 2.5 miles west of the intersection of North
na Highway 42 and State Road 1537, 0.3 mile
west of the intersection of State Road 1537 and a
g road, 10 feet west of logging road:

) to 4 inches; brown (10YR 5/3) silt loam; weak
edium granular structure; very friable; many fine
nd medium roots; strongly acid; clear smooth
oundary.

to 7 inches; light brown (7.5YR 6/4) silt loam; weak
edium granular structure; very friable; many fine
nd medium roots; strongly acid; clear smooth
oundary.

7 to 30 inches; red (2.5YR 4/6) clay; strong
edium angular blocky structure; very firm, sticky
nd plastic; common distinct clay films on faces of
eds; very strongly acid; gradual wavy boundary.

30 to 35 inches; red (2.5YR 4/6) silty clay loam;
ew fine prominent very pale brown (10YR 7/3)
ottles; moderate medium angular blocky structure;
iable; common distinct clay films on faces of peds;
ery strongly acid; gradual wavy boundary.

5 to 60 inches; mottled red (2.5YR 4/6) and dark
eddish brown (2.5YR 3/4) saprolite that crushes to
lt loam; massive; very strongly acid; gradual wavy
oundary.

0 to 72 inches; dark reddish brown (2.5YR 3/4)
aprolite that crushes to silt loam; massive; very
trongly acid; abrupt wavy boundary.

2 to 96 inches; fine grained sandstone and
udstone.

clayey Bt horizon ranges from 20 to 28 inches in
ess. The White Store soils are very strongly acid or
ly acid except where lime has been added.

A or Ap horizon has hue of 7.5YR or 10YR, value
6, and chroma of 2 to 4.

E horizon has hue of 7.5YR to 10YR, value of 4
nd chroma of 3 to 6. It is silt loam. Some pedons
have an E horizon.

Bt horizon has hue of 2.5YR to 5YR, value of 3 to
chroma of 3 to 8. In some pedons, mottles that
hroma of 2 or less are below the top 10 inches of
horizon. The Bt horizon is dominantly clay but can
hin layers of silty clay loam.

C horizon has hue of 2.5YR or 5YR, value of 3 to
chroma of 3 to 8. It is weathered saprolite from
c age mudstone, siltstone, or fine grained
one that crushes to silt loam or silty clay loam.

The Cr horizon is fine grained sandstone, mudstone, or siltstone.

Wickham Series

The Wickham series consists of well drained soils on stream terraces. These soils formed in moderately fine textured fluvial sediment. Slopes range from 2 to 8 percent.

Typical pedon of Wickham sandy loam, 2 to 8 percent slopes; 0.7 mile southeast of the intersection of North Carolina Highway 42 and Deep River, 250 feet northwest of the intersection of North Carolina Highway 42 and State Road 1321, 50 feet west of farm path, in a field:

Ap—0 to 5 inches; reddish brown (5YR 5/3) sandy loam; weak medium granular structure; very friable; few fine roots; slightly acid; clear smooth boundary.

Bt1—5 to 23 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; few distinct clay films on faces of peds; medium acid; gradual wavy boundary.

Bt2—23 to 44 inches; red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

Bt3—44 to 52 inches; red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; few distinct clay films on faces of peds; strongly acid; gradual wavy boundary.

C—52 to 72 inches; red (2.5YR 4/6) sandy loam; pockets of sandy clay loam; massive; friable; very strongly acid.

The loamy horizons range from 45 to more than 55 inches in thickness. The Wickham soils range from very strongly acid to medium acid except where lime has been added. Some pedons contain few flakes of mica throughout the profile.

The A or Ap horizon has hue of 5YR or 7.5YR, value of 4 to 6, and chroma of 2 to 4.

The Bt horizon has hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8. It is sandy clay loam or sandy clay.

The C horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 3 to 8. It is sandy loam or sandy clay loam.

Formation of the Soils

Soils are the products of soil-forming processes acting upon materials altered or deposited by geologic forces. The major factors that contribute to the differences among soils are climate, plant and animal life, parent material, relief, and time. Climate and plant and animal life, particularly vegetation, are the active forces in soil formation. Their effect on parent material is modified by relief and by the length of time the parent material has been in place. The relative importance of each factor differs from place to place. in some places one factor dominates in the formation of a soil and determines most of its properties, but normally the interaction of all factors determines the kind of soil that develops in any given place.

Climate

Climate, as a factor of soil formation, affects the physical, chemical, and biological relationships in the soil, primarily through the influence of precipitation and temperature. Temperature and rainfall affect weathering of bedrock and decomposition of organic matter. The amount of leaching in a soil is also related to the amount of precipitation that falls and its subsequent movement through the soil. The effects of climate also control the kinds of plants and animals that can thrive in a region. Temperature influences the kind and growth of organisms and the speed of chemical and physical reactions in the soil.

Lee County has a hot, humid summer and a moderately cold, moist winter. The county is on a low-lying plateau, ranging in elevation from 165 to 503 feet above sea level. The climate favors chemical processes resulting in the rapid decomposition of organic matter and weathering of bedrock. The moderate temperatures and abundant rainfall favor intense leaching of soluble bases and oxidation of organic matter. Because of this, most soils in the county are acidic.

Variations in climate are small and probably have not caused major local differences in soils. The most important effect that climate has had on the formation of soils in Lee County is in the alteration of parent material through fluctuations in temperature, changes in the amount of precipitation, and through influences on plant and animal life.

Plant and Animal Life

Animal life and vegetation are indispensable in soil development; their greatest influence is in the forming and differentiation of soil horizons. The type and amount of organisms in and on the soil are determined in part by climate and in part by the nature of the soil material, relief, moisture conditioning, and the age of the soil. Bacteria, fungi, and other micro-organisms aid in the weathering of rocks and in the decomposition of organic material. The plants and animals that live on a soil are its primary source of organic material. Plants largely determine the kinds, amounts, and ways in which organic material is added to the soil system. Plants are also important in nutrient cycles because they change the base status and the leaching process. Animals convert complex compounds into simpler forms, add their own bodies to the organic matter, and modify a variety of chemical and physical properties.

In Lee County, most of the organic material accumulates on the surface and is acted upon by micro-organisms, fungi, earthworms, and other forms of life, and by direct chemical reaction. The material is then mixed with the upper part of the mineral portion of the soil by the activities of earthworms and other small invertebrates. Rodents have had little effect on the formation of soils in the county.

Organic material decomposes rather rapidly because of the moderate temperature, the abundant moisture supply, and the character of the organic material. Organic matter decays rapidly in well drained soils, such as the Mayodan soils, that have little accumulation in the surface layer. Decomposition is slower in the wetter soils, such as the Wehadkee soils, and there is more accumulation.

In general, the soils in the Piedmont part of Lee County developed under a hardwood forest, and the soils in the Coastal Plain part of the county developed under a pine forest. These trees take up elements from the subsoil and add organic matter to the surface by depositing leaves, roots, twigs, and eventually the whole plant. The material is then acted upon by organisms and undergoes chemical alterations. Under the native forests of this county, not enough bases are brought to the surface by plants to counteract the effects of leaching. This has contributed in part to the formation of dominantly acidic soils.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly such soil formed in recent alluvium or on steep rocky slopes.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bottom land. The normal flood plain of a stream, subject to flooding.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels, i.e., clay coating, clay skin.

Clayey. The soil contains more than 35 percent clay and is clay loam, silty clay loam, silty clay, sandy clay, or clay.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Coarse fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Complex, soil. A map unit of two or more kinds of soil in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

ge. Descriptive terms
few, common, and
nd *coarse*; and
prominent. The size
ameter along the
cates less than 5
medium, from 5 to 15
inch); and *coarse*, more
6 inch).
of color by degrees of
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hroma of 4.
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nutrients are mainly
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ganese, copper, boron,
oil and carbon,
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claypan, plowpan, and

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soil that enables water
Permeability is
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urated soil. Terms

..... less than 0.06 inch
..... 0.06 to 0.2 inch
.....0.2 to 0.6 inch
... 0.6 inch to 2.0 inches
.....2.0 to 6.0 inches
.....6.0 to 20 inches
....more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Subsurface tunnels or pipelike cavities are formed by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor outlets (in tables). In these areas, surface or subsurface drainage outlets are difficult or expensive to install.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of the acidity or alkalinity of a soil expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	pH
Extremely acid	below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered, or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-size particles.

Sandy. The soil contains a high percentage of sand. The texture is sandy or loamy sand.

Saprolite (soil science). Unconsolidated, residual material underlying the soil and grading to hard bedrock below.

Seasonal high water table. The highest level of a saturated zone (the apparent or perched water table) over a continuous period of more than two weeks in most years.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shrink-swell. The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then

Tables

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s in 10 have--		Average number of days with 0.10 inch or more	Average snowfall
	More than--		
	In		In
)	5.27	8	2.1
	5.03	7	1.4
	5.38	8	0.7
	4.44	7	0.0
	5.21	8	0.0
	6.32	7	0.0
	8.00	8	0.0
	7.42	8	0.0
)	5.67	5	0.0
	5.10	5	0.0
	4.57	5	0.0
	5.18	7	0.8
	---	---	---
	---	---	---
	54.33	83	5.0

calculated by adding the
emperature below which

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Data recorded in the period 1951-78
at Moncure, North Carolina]

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	April 12	April 27	May 7
2 years in 10 later than--	April 7	April 21	May 2
5 years in 10 later than--	March 27	April 10	April 23
First freezing temperature in fall:			
1 year in 10 earlier than--	October 24	October 12	October 6
2 years in 10 earlier than--	October 29	October 16	October 11
5 years in 10 earlier than--	November 7	October 24	October 19

TABLE 3.--GROWING SEASON

[Data recorded in the period 1951-78
at Moncure, North Carolina]

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	200	174	160
8 years in 10	208	182	166
5 years in 10	225	196	178
2 years in 10	241	211	191
1 year in 10	249	218	197

Acres	Percent
5,941	9.4
2,675	1.6
3,681	2.3
3,771	2.3
3,348	2.1
5,380	3.3
3,740	2.3
6,755	4.1
722	0.4
4,135	2.5
5,333	3.2
1,920	1.2
11,819	7.3
5,522	3.4
1,428	0.9
19,285	11.8
13,729	8.4
1,963	1.2
1,677	1.0
2,988	1.8
1,776	1.1
3,616	2.2
7,176	4.4
7,330	4.5
9,609	5.9
200	0.1
1,073	0.7
968	0.6
1,908	1.2
1,623	1.0
2,014	1.2
3,579	2.2
1,279	0.8
1,002	0.6
1,148	0.7
710	0.4
321	0.2
6,294	3.9
2,477	1.5
1,134	0.7
1,586	1.0
565	0.3
163,200	100.0

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Map symbol and soil name	Corn	Soybeans	Tobacco	Sweet potatoes	Oats	Grass hay	Pasture
	Bu	Bu	Lbs	Bu	Bu	Tons	AUM*
BaB---- Blaney	60	25	---	---	50	---	---
BaD---- Blaney	50	20	---	---	50	---	---
CaB---- Candor	40	15	1,300	---	---	3.5	6.0
CfB---- Cecil	95	---	2,100	---	90	---	8.0
CfD---- Cecil	80	---	1,900	---	75	---	7.0
Ch---- Chewacla	80	30	---	---	40	---	9.0
Cp---- Congaree	140	40	---	---	75	---	---
CrB---- Creedmoor	75	---	2,200	---	75	---	6.0
CrD---- Creedmoor	60	---	2,000	---	65	---	5.8
DoA---- Dothan	120	40	2,800	---	---	6	---
DoB---- Dothan	100	30	---	---	---	5.5	---
DuB---- Durham	85	---	2,200	---	75	---	5.6
FuB---- Fuquay	80	30	2,400	---	60	---	8.5
GhB---- Gilead	75	35	2,200	---	---	4.2	---
GhD---- Gilead	---	---	---	---	---	3.3	---
MfB---- Mayodan	95	---	2,100	---	85	---	8.0
MfD---- Mayodan	75	---	1,900	---	60	---	7.0
MfE---- Mayodan	---	---	---	---	---	---	6.0
MrB---- Mayodan-Urban land	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Corn	Soybeans	Tobacco	Sweet potatoes	Oats	Grass hay	Pasture
	Bu	Bu	Lbs	Bu	Bu	Tons	AUM*
NaB---------- Nason	90	30	---	---	70	---	8.0
NaD---------- Nason	85	30	---	---	65	---	7.5
PaF---------- Pacolet	---	---	---	---	---	---	---
PfB---------- Pinkston	80	---	---	---	80	---	5.0
PfD---------- Pinkston	65	---	---	---	65	---	4.0
PfF---------- Pinkston	---	---	---	---	---	---	---
Pt. Pits							
Ro---------- Roanoke	---	---	---	---	---	---	5.2
StA---------- State	130	45	3,000	---	---	---	---
TaB---------- Tatum	90	30	---	---	70	---	8.0
TaD---------- Tatum	85	30	---	---	65	---	7.5
TaE---------- Tatum	65	---	---	---	60	---	7.0
ToB---------- Tetotum	145	35	---	---	---	---	---
Ud. Udorthents							
Ur. Urban land							
VaB---------- Vaucluse	70	25	---	---	60	---	---
VaD---------- Vaucluse	50	15	---	---	40	---	---
VaE---------- Vaucluse	---	---	---	---	---	---	---
Wn---------- Wehadkee	---	---	---	---	---	---	8.5
WsB---------- White Store	80	---	1,800	---	70	---	6.0

TABLE 5.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Corn	Soybeans	Tobacco	Sweet potatoes	Oats	Grass hay	Pasture
	Bu	Bu	Lbs	Bu	Bu	Tons	AUM*
WsD---------- White Store	60	---	---	---	---	---	5.6
WwB---------- Wickham	115	---	2,600	---	80	---	9.5

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

CLASSES AND SUBCLASSES

excluded. Absence of an
creage]

anagement concerns (subclass)		
on	Wetness (w)	Soil problem (s)
s	Acres	Acres
--	---	---
49	---	1,898
12	3,740	16,570
65	5,380	7,051
--	1,073	---
52	6,294	---
25	---	---
--	---	---

TABLE 7.--WOODLAND SITE INDEX VALUES

Indicator forest type or species	1 Very High	2 High	3 Moderately High	4 Moderate	5 Low
	Site Index				
Cottonwood	106+	96-105	86-95	76-85	75-
Yellow poplar	106+	96-105	86-95	76-85	75-
Sweetgum	96+	86-95	76-85	66-75	65-
Water oak	96+	86-95	76-85	66-75	65-
Loblolly pine	96+	86-95	76-85	66-75	65-
Slash pine	96+	86-95	76-85	66-75	65-
Longleaf pine	86+	76-85	66-75	56-65	55-
Southern red oak	86+	76-85	66-75	56-65	55-
Water tupelo	86+	76-85	66-75	56-65	55-
Redcedar	66+	56-65	46-55	35-45	35-

TABLE 8.--POTENTIAL YEARLY GROWTH OR YIELD OF LOBLOLLY PINE

[Potential average yearly growth per acre in board feet international (1/8-inch Rule) for a fully stocked stand 7 inches in diameter, breast high and over]

Age (in years)	Site index in feet						
	60	70	80	90	100	110	120
	Growth (in board feet)						
15	---	3	10	57	120	200	307
20	---	75	150	250	375	500	650
25	80	180	300	440	580	740	940
30	150	283	417	567	733	917	1,100
35	200	357	500	657	829	1,029	1,229
40	250	400	550	712	888	1,075	1,288
45	278	433	578	744	911	1,100	1,300
50	300	440	590	750	910	1,090	1,290
55	318	445	591	736	900	1,073	1,255
60	317	442	575	717	875	1,050	1,217
65	315	438	562	692	846	1,015	1,777
70	314	421	543	671	814	971	1,136
75	307	413	527	647	787	933	1,087
80	300	400	506	625	756	894	1,044

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ODUCTIVITY--Continued

Potential productivity		
Common trees	Site index	Trees to plant
Loblolly pine-------	82	Loblolly pine,
Shortleaf pine------	---	Virginia pine,
Yellow poplar-------	---	yellow poplar.
Sweetgum------------	---	
Southern red oak----	---	
Black oak-----------	---	
White oak-----------	---	
Hickory-------------	---	
Loblolly pine-------	82	Loblolly pine,
Shortleaf pine------	---	Virginia pine,
Yellow poplar-------	---	yellow poplar.
Sweetgum------------	---	
Southern red oak----	---	
Black oak-----------	---	
White oak-----------	---	
Hickory-------------	---	
Northern red oak----	66	Loblolly pine, eastern
Virginia pine-------	69	white pine.
Shortleaf pine------	66	
Loblolly pine-------	80	
Loblolly pine-------	78	Loblolly pine,
Shortleaf pine------	70	shortleaf pine,
Yellow poplar-------	90	yellow poplar.
Southern red oak----	60	Loblolly pine,
Virginia pine-------	60	Virginia pine.
Southern red oak----	60	Loblolly pine,
Virginia pine-------	60	Virginia pine.
Willow oak----------	76	Yellow poplar,
Yellow poplar-------	90	sweetgum.
Sweetgum------------	90	
Red maple-----------	---	
Southern red oak----	85	Black walnut, yellow
Yellow poplar-------	100	poplar, loblolly
Virginia pine-------	85	pine.
Loblolly pine-------	95	
Northern red oak----	72	Loblolly pine, eastern
Virginia pine-------	68	white pine, yellow
Shortleaf pine------	68	poplar.
Loblolly pine-------	78	
Yellow poplar-------	83	
Northern red oak----	72	Loblolly pine, eastern
Virginia pine-------	68	white pine, yellow
Shortleaf pine------	68	poplar.
Loblolly pine-------	78	
Yellow poplar-------	83	

DUCTIVITY--Continued

Potential productivity		
Common trees	Site index	Trees to plant
oblolly pine	88	Loblolly pine.
weetgum	85	
outhern red oak	76	
oblolly pine	76	Loblolly pine.
hortleaf pine	56	
oblolly pine	102	Loblolly pine,
weetgum	93	American sycamore,
ellow poplar	98	yellow poplar, green
illow oak	90	ash, sweetgum,
reen ash	96	eastern cottonwood,
ater oak	86	cherrybark oak.
hite ash	88	
oblolly pine	75	Loblolly pine,
irginia pine	65	Virginia pine,
		eastern redcedar.
oblolly pine	90	Loblolly pine,
ellow poplar	90	yellow poplar.
outhern red oak	---	

TABLE 10.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
BaB---- Blaney	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight----	Severe: droughty.
BaD---- Blaney	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Slight----	Severe: droughty.
CaB---- Candor	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
CfB---- Cecil	Slight----	Slight----	Moderate: slope, small stones.	Slight----	Slight.
CfD---- Cecil	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight----	Slight.
Ch---- Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
Cp---- Congaree	Severe: flooding.	Moderate: flooding.	Severe: flooding.	Moderate: flooding.	Severe: flooding.
CrB---- Creedmoor	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Moderate: wetness.	Moderate: wetness.
CrD---- Creedmoor	Severe: percs slowly.	Severe: percs slowly.	Severe: slope, percs slowly.	Moderate: wetness.	Moderate: wetness, slope.
DoA---- Dothan	Slight----	Slight----	Slight----	Slight----	Moderate: droughty.
DoB---- Dothan	Slight----	Slight----	Moderate: slope.	Slight----	Moderate: droughty.
DuB---- Durham	Slight----	Slight----	Moderate: slope.	Slight----	Moderate: droughty.
FuB---- Fuquay	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: too sandy.	Moderate: droughty.
GhB---- Gilead	Moderate: percs slowly, wetness.	Moderate: percs slowly, wetness.	Moderate: slope, percs slowly, wetness.	Moderate: wetness.	Moderate: wetness.
GhD---- Gilead	Moderate: slope, percs slowly.	Moderate: percs slowly, slope.	Severe: slope.	Moderate: wetness.	Moderate: slope.
MfB---- Mayodan	Slight----	Slight----	Moderate: slope.	Slight----	Slight.

ıths and trails	Golf fairways
.ight----------	Moderate: slope.
›derate: slope.	Severe: slope.
.ight----------	Slight.
.ight----------	Slight.
evere: rodes easily.	Moderate: slope.
›vere: slope.	Severe: slope.
.ight----------	Moderate: droughty.
.ight----------	Moderate: slope, droughty.
evere: slope.	Severe: slope.
evere: wetness.	Severe: flooding, wetness.
.ight----------	Slight.
.ight----------	Slight.
vere: rodes easily.	Moderate: slope.
vere: rodes easily.	Severe: slope.
derate: etness.	Moderate: wetness.

TABLE 10.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Ur. Urban land					
VaB Vaucluse	Moderate: percs slowly, small stones.	Moderate: percs slowly, small stones.	Moderate: small stones, percs slowly.	Slight	Moderate: small stones, large stones.
VaD Vaucluse	Moderate: slope, percs slowly, small stones.	Moderate: slope, percs slowly, small stones.	Severe: slope, small stones.	Slight	Moderate: small stones, large stones, slope.
VaE Vaucluse	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
Wn Wehadkee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
WsB White Store	Severe: wetness, percs slowly.	Severe: percs slowly.	Severe: wetness.	Severe: erodes easily.	Moderate: wetness.
WsD White Store	Severe: wetness, percs slowly.	Severe: percs slowly.	Severe: slope, wetness.	Severe: erodes easily.	Moderate: wetness, slope.
WwB Wickham	Slight	Slight	Moderate: slope.	Slight	Slight.

TABLE 11.--WILDLIFE HABITAT

text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

ap symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
ney	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
ney	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
dor	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
CfD il	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
wacla	Very poor.	Poor	Poor	Good	Good	Fair	Fair	Poor	Good	Fair.
garee	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
edmoor	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
edmoor	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
DoB han	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
nam	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
uay	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
ead	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ead	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
dan	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
dan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
dan	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
dan n land.	---	---	---	---	---	---	---	---	---	---
on	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

TABLE 11.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
NaD---- Nason	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
PaF---- Pacolet	Very poor.	Poor	Poor	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
PfB---- Pinkston	Fair	Good	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
PfD---- Pinkston	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
PfF---- Pinkston	Very poor.	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Pt. Pits										
Ro---- Roanoke	Poor	Poor	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
StA---- State	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
TaB---- Tatum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
TaD---- Tatum	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TaE---- Tatum	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
ToB---- Tetotum	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Ud. Udorthents										
Ur. Urban land										
VaB---- Vaucluse	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
VaD, VaE---- Vaucluse	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Wn---- Wehadkee	Very poor.	Poor	Poor	Fair	Fair	Good	Fair	Poor	Fair	Fair.
WsB---- White Store	Fair	Good	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
WsD---- White Store	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
WwB---- Wickham	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

TABLE 12.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
BaB---------- Blaney	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: droughty.
BaD---------- Blaney	Severe: cutbanks cave.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Severe: droughty.
CaB---------- Candor	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Severe: droughty.
CfB---------- Cecil	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Moderate: low strength.	Slight.
CfD---------- Cecil	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, low strength.	Slight.
Ch---------- Chewacla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness, flooding.
Cp---------- Congaree	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.
CrB---------- Creedmoor	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
CrD---------- Creedmoor	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: wetness, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, wetness.
DoA---------- Dothan	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
DoB---------- Dothan	Moderate: wetness.	Slight---------	Moderate: wetness.	Moderate: slope.	Slight---------	Moderate: droughty.
DuB---------- Durham	Slight---------	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
FuB---------- Fuquay	Slight---------	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
GhB---------- Gilead	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: slope, wetness.	Severe: low strength.	Moderate: wetness.
GhD---------- Gilead	Severe: wetness.	Moderate: slope.	Severe: wetness.	Severe: slope.	Severe: low strength.	Moderate: slope.

TABLE 12.--BUILDING SITE DEVELOPMENT--Continued

ap symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
um	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, low strength.	Severe: slope.
otum	Severe: cutbanks cave, wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Moderate: low strength, wetness.	Moderate: wetness.
rthents						
an land						
cluse	Moderate: dense layer.	Slight	Slight	Moderate: slope.	Slight	Moderate: small stones, large stones.
cluse	Moderate: dense layer, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: small stones, large stones, slope.
cluse	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
dkee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness, flooding.
e Store	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
e Store	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell, slope.	Severe: low strength, shrink-swell.	Moderate: wetness, slope.
kham	Slight	Slight	Slight	Moderate: slope.	Slight	Slight.

TABLE 13.--SANITARY FACILITIES

ne terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition; it does not eliminate the need for onsite investigation]

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
ney	Severe: percs slowly, poor filter.	Severe: seepage.	Slight	Severe: seepage.	Good.
ney	Severe: percs slowly, poor filter.	Severe: seepage, slope.	Moderate: slope.	Severe: slope, seepage.	Fair: slope.
dor	Slight	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy, seepage.
il	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight	Fair: too clayey, hard to pack.
il	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
wacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: hard to pack, wetness.
garee	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Fair: wetness.
edmoor	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
edmoor	Severe: wetness, percs slowly.	Severe: slope.	Severe: wetness, too clayey.	Moderate: wetness, slope.	Poor: too clayey, hard to pack.
han	Severe: wetness, percs slowly.	Moderate: seepage.	Moderate: wetness.	Slight	Good.
han	Severe: wetness, percs slowly.	Moderate: seepage, slope.	Moderate: wetness.	Slight	Good.
ham	Moderate: percs slowly.	Moderate: seepage.	Slight	Slight	Good.
uay	Moderate: percs slowly.	Moderate: slope.	Slight	Slight	Fair: too sandy.
ead	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness.	Moderate: wetness.	Fair: too clayey, wetness.

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TABLE 13.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
StA---------- State	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Moderate: wetness.	Fair: too clayey, thin layer.
TaB---------- Tatum	Moderate: depth to rock, percs slowly.	Moderate: slope, seepage, depth to rock.	Severe: too clayey, depth to rock.	Moderate: depth to rock.	Poor: too clayey, hard to pack.
TaD---------- Tatum	Moderate: slope, depth to rock, percs slowly.	Severe: slope.	Severe: too clayey, depth to rock.	Moderate: slope, depth to rock.	Poor: too clayey, hard to pack.
TaE---------- Tatum	Severe: slope.	Severe: slope.	Severe: slope, too clayey, depth to rock.	Severe: slope.	Poor: slope, too clayey, hard to pack.
ToB---------- Tetotum	Severe: wetness.	Severe: seepage, flooding, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: too clayey, wetness.
Ud. Udorthents					
Ur. Urban land					
VaB---------- Vaucluse	Severe: percs slowly.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: too clayey.
VaD---------- Vaucluse	Severe: percs slowly.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: too clayey, slope.
VaE---------- Vaucluse	Severe: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: seepage, slope.	Poor: slope.
Wn---------- Wehadkee	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
WsB---------- White Store	Severe: wetness, percs slowly.	Severe: wetness.	Severe: depth to rock, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
WsD---------- White Store	Severe: wetness, percs slowly.	Severe: slope, wetness.	Severe: depth to rock, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
WwB---------- Wickham	Slight----------	Moderate: seepage, slope.	Severe: seepage.	Slight----------	Fair: thin layer.

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TABLE 14.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
PfB, PfD---------- Pinkston	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
PfF---------- Pinkston	Poor: slope, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
Pt. Pits				
Ro---------- Roanoke	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
StA---------- State	Good----------	Probable----------	Improbable: too sandy.	Good.
TaB, TaD---------- Tatum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
TaE---------- Tatum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
ToB---------- Tetotum	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
Ud. Udorthents				
Ur. Urban land				
VaB, VaD---------- Vaucluse	Good----------	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
VaE---------- Vaucluse	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
Wn---------- Wehadkee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
WsB, WsD---------- White Store	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
WwB---------- Wickham	Fair: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Good.

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n the Glossary. See text for definitions of
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ion; it does not eliminate the need for

	Features affecting--		
	Drainage	Terraces and diversions	Grassed waterways
	Deep to water	Soil blowing---	Droughty, rooting depth.
	Deep to water	Slope, soil blowing.	Slope, droughty, rooting depth.
	Deep to water	Too sandy------	Droughty.
	Deep to water	Favorable------	Favorable.
	Deep to water	Slope----------	Slope.
	Flooding-------	Wetness--------	Wetness.
	Flooding-------	Erodes easily, wetness.	Erodes easily.
	Percs slowly, slope.	Wetness, percs slowly.	Percs slowly.
	Percs slowly, slope.	Slope, wetness, percs slowly.	Slope, percs slowly.
	Deep to water	Favorable------	Droughty.
	Deep to water	Favorable------	Droughty.
	Deep to water	Favorable------	Droughty.
	Deep to water	Too sandy------	Droughty.
	Percs slowly, slope.	Percs slowly, wetness.	Percs slowly, wetness.
	Percs slowly, slope.	Slope, percs slowly.	Slope, percs slowly.
	Deep to water	Slope----------	Favorable.

TABLE 15.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
MfD---------- Mayodan	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope----------	Slope.
MfE---------- Mayodan	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope----------	Slope.
MrB: Mayodan----------	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope----------	Favorable.
Urban land.						
NaB---------- Nason	Moderate: seepage, depth to rock, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
NaD---------- Nason	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
PaF---------- Pacolet	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope----------	Slope.
PfB---------- Pinkston	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Depth to rock	Droughty, depth to rock.
PfD, PfF---------- Pinkston	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Depth to rock, slope.	Slope, droughty, depth to rock.
Pt. Pits						
Ro---------- Roanoke	Moderate: seepage.	Severe: wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.
StA---------- State	Moderate: seepage.	Moderate: thin layer, piping.	Severe: cutbanks cave.	Deep to water	Soil blowing---	Favorable.
TaB---------- Tatum	Moderate: seepage, depth to rock, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Erodes easily	Erodes easily.
TaD, TaE---------- Tatum	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.
ToB---------- Tetotum	Moderate: seepage.	Severe: wetness.	Severe: cutbanks cave.	Favorable------	Wetness, soil blowing.	Favorable.
Ud. Udorthents						
Ur. Urban land						
VaB---------- Vaucluse	Severe: seepage.	Moderate: thin layer.	Severe: no water.	Deep to water	Percs slowly, soil blowing.	Droughty, rooting depth.

TABLE 15.--WATER MANAGEMENT--Continued

Limitations for--			Features affecting--		
?ond ervoir reas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Terraces and diversions	Grassed waterways
:: ge, .	Moderate: thin layer.	Severe: no water.	Deep to water	Slope, percs slowly, soil blowing.	Slope, droughty, rooting depth.
te: ge.	Severe: wetness.	Slight---------	Flooding-------	Wetness--------	Wetness.
te: to rock.	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Erodes easily, wetness, percs slowly.	Wetness, erodes easily, percs slowly.
te: to rock.	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
te: ge.	Moderate: thin layer.	Severe: no water.	Deep to water	Favorable------	Favorable.

	Liquid limit	Plasticity index
	Pct	
	---	NP
	<25	NP-13
	20-49	4-12
	---	---
	---	NP
	<30	4-16
	30-44	18-30
	20-35	11-20
	---	---
	<36	NP-5
	25-50	7-26
	41-80	15-45
	---	---
	<36	NP-5
	25-50	7-26
	41-80	15-45
	---	---
	<38	NP-10
	40-60	15-30
	20-35	4-12
	<28	NP-7
	38-65	11-30
	<28	NP-6
	<30	NP-10
	<30	NP-10
	16-35	3-15
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TABLE 16.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
Pt. Pits											
Ro---------- Roanoke	0-4	Silt loam--------	SM-SC, CL-ML, CL, SC	A-4, A-6	0	95-100	85-100	60-100	35-90	20-35	5-16
	4-13	Clay loam, silty clay loam.	CL	A-6, A-7	0	95-100	85-100	80-100	80-95	35-45	14-20
	13-65	Clay, silty clay, clay loam.	CH, CL	A-7	0	90-100	85-100	85-100	65-95	45-70	22-40
StA---------- State	0-8	Fine sandy loam	SM, ML, CL-ML, SM-SC	A-2, A-4	0	95-100	95-100	45-85	25-55	<28	NP-7
	8-49	Loam, clay loam, sandy clay loam.	CL, SC	A-4, A-6	0	95-100	95-100	75-100	35-80	24-40	8-22
	49-72	Stratified sand, sandy loam.	SM, SM-SC, SP-SM	A-1, A-2, A-3, A-4	0	85-100	75-100	40-90	5-50	<25	NP-7
TaB, TaD, TaE---- Tatum	0-8	Silt loam--------	ML, CL, SM	A-4	0	85-100	80-100	65-100	40-90	20-34	NP-10
	8-50	Silty clay loam, silty clay, clay.	MH	A-7	0	75-100	70-95	60-95	55-95	50-80	10-36
	50-60	Silt loam, loam, silty clay loam.	CL	A-6, A-7	0	75-100	70-95	60-90	60-85	30-45	12-20
ToB---------- Tetotum	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	85-100	80-100	45-85	25-55	<30	NP-7
	7-48	Sandy clay loam, clay loam, silty clay loam.	SC, CL	A-6, A-7	0-2	85-100	80-100	60-95	35-85	30-45	10-20
	48-60	Stratified sandy clay loam to loamy fine sand.	SM, SC, ML, CL	A-2, A-4, A-6	0-2	80-100	75-100	50-95	15-75	<30	NP-15
Ud. Udorthents											
Ur. Urban land											
VaB, VaD, VaE---- Vaucluse	0-14	Gravelly sandy loam.	SM	A-1, A-2, A-4	3-10	70-90	60-86	40-60	20-45	<30	NP
	14-80	Sandy clay loam, sandy loam.	SC, SM-SC	A-2, A-4, A-6	0-5	90-100	90-100	51-75	25-50	20-40	5-15
Wn---------- Wehadkee	0-6	Fine sandy loam	SM, SC, SM-SC	A-2, A-4	0	100	95-100	60-90	30-50	<35	NP-10
	6-46	Loam, sandy clay loam, clay loam.	ML, CL, CL-ML	A-6, A-7, A-4	0	100	99-100	85-100	51-90	25-50	7-25
	46-60	Variable---------	---	---	---	---	---	---	---	---	---
WsB, WsD--------- White Store	0-7	Silt loam--------	ML, CL-ML	A-4	0-3	90-100	80-100	75-96	51-80	<25	NP-7
	7-30	Clay-------------	CH	A-7	0-3	95-100	90-100	85-99	80-98	70-92	45-65
	30-96	Variable---------	---	---	---	---	---	---	---	---	---
WwB---------- Wickham	0-5	Sandy loam-------	SM, SM-SC, ML, CL-ML	A-4	0	95-100	90-100	70-100	45-80	<25	NP-7
	5-52	Sandy clay loam, clay loam, loam.	CL-ML, CL, SC, SM-SC	A-2, A-4, A-6, A-7-6	0	95-100	90-100	75-100	30-70	20-41	5-15
	52-72	Variable---------	---	---	---	---	---	---	---	---	---

TABLE 17.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not available or were not estimated]

) symbol and soil name	Depth	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors	
						K	T
	In	In/hr	In/in	pH			
BaD---------	0-28	>6.0	0.03-0.06	4.5-6.0	Low----------	0.15	4
ley	28-49	0.2-0.6	0.05-0.10	4.5-5.5	Low----------	0.28	
	49-60	0.2-0.6	0.03-0.08	4.5-5.5	Low----------	0.28	
----------	0-25	6.0-20	0.02-0.06	3.6-6.0	Low----------	0.10	5
lor	25-35	6.0-20	0.06-0.10	3.6-5.5	Low----------	0.10	
	35-54	6.0-20	0.02-0.05	3.6-5.5	Low----------	0.10	
	54-76	0.6-2.0	0.12-0.16	3.6-5.5	Low----------	0.20	
	76-99	---	---	---	----------	----	
CfD---------	0-6	2.0-6.0	0.12-0.14	4.5-6.0	Low----------	0.28	4
l	6-54	0.6-2.0	0.13-0.15	4.5-5.5	Low----------	0.28	
	54-70	---	---	---	----------	----	
----------	0-6	0.6-2.0	0.15-0.24	4.5-6.5	Low----------	0.28	5
acla	6-26	0.6-2.0	0.15-0.24	4.5-6.5	Low----------	0.32	
	26-60	0.6-2.0	0.12-0.20	4.5-6.5	Low----------	0.28	
----------	0-9	0.6-2.0	0.12-0.20	4.5-7.3	Low----------	0.37	5
aree	9-80	0.6-2.0	0.12-0.20	4.5-7.3	Low----------	0.37	
CrD---------	0-14	2.0-6.0	0.10-0.14	3.6-5.5	Low----------	0.28	3
dmoor	14-46	<0.06	0.13-0.15	3.6-5.5	Moderate-------	0.32	
	46-86	<0.06	0.10-0.14	3.6-5.5	Low----------	0.37	
	86-96	---	---	---	----------	----	
DoB---------	0-15	2.0-6.0	0.06-0.10	4.5-5.5	Very low-------	0.15	5
an	15-45	0.6-2.0	0.12-0.16	4.5-5.5	Low----------	0.28	
	45-65	0.2-0.6	0.08-0.12	4.5-5.5	Low----------	0.28	
----------	0-15	2.0-6.0	0.06-0.10	4.5-6.0	Low----------	0.17	5
am	15-56	0.2-0.6	0.14-0.18	4.5-5.5	Low----------	0.20	
	56-70	0.6-2.0	0.08-0.14	4.5-5.5	Low----------	0.20	
----------	0-24	>6.0	0.04-0.09	4.5-6.0	Low----------	0.15	5
ay	24-28	0.6-2.0	0.12-0.15	4.5-6.0	Low----------	0.20	
	28-68	0.06-0.2	0.10-0.13	4.5-6.0	Low----------	0.20	
	68-83	---	---	---	----------	----	
GhD---------	0-7	2.0-6.0	0.05-0.09	4.5-5.5	Low----------	0.17	3
ad	7-20	0.6-2.0	0.10-0.15	4.5-5.5	Low----------	0.24	
	20-32	0.06-0.6	0.12-0.16	4.5-5.5	Low----------	0.28	
	32-52	0.2-0.6	0.10-0.15	4.5-5.5	Low----------	0.24	
	52-75	---	---	4.5-5.5	----------	----	
MfD, MfE----	0-7	>6.0	0.11-0.17	4.5-6.0	Low----------	0.24	4
dan	7-14	0.6-2.0	0.12-0.22	4.5-6.0	Low----------	0.32	
	14-42	0.6-2.0	0.12-0.18	4.5-5.5	Moderate-------	0.28	
	42-60	---	0.02-0.06	4.5-5.5	Low----------	----	
dan---------	0-7	>6.0	0.11-0.17	4.5-6.0	Low----------	0.24	4
	7-14	0.6-2.0	0.12-0.22	4.5-6.0	Low----------	0.32	
	14-42	0.6-2.0	0.12-0.18	4.5-5.5	Moderate-------	0.28	
	42-60	---	0.02-0.06	4.5-5.5	Low----------	----	
n land.							

AL PROPERTIES OF THE SOILS--Continued

lable apacity	Soil reaction	Shrink-swell potential	Erosion factors	
			K	T
/in	pH			
-0.20	4.5-6.5	Low----------	0.37	4
-0.19	4.5-5.5	Moderate-------	0.28	
-0.20	4.5-5.5	Low----------	0.28	
-0.12	4.5-6.5	Low----------	0.20	3
-0.15	4.5-6.0	Low----------	0.28	
-0.15	4.5-6.0	Low----------	0.28	
-0.18	4.5-6.5	Low----------	0.32	2
-0.18	4.5-5.5	Low----------	0.24	
-0.16	4.5-5.5	Low----------	0.24	
--	---	----------	----	
-0.20	3.6-5.5	Low----------	0.37	4
-0.19	3.6-5.5	Moderate-------	0.24	
-0.19	3.6-5.5	Moderate-------	0.24	
-0.15	4.5-5.5	Low----------	0.28	5
-0.19	4.5-5.5	Low----------	0.28	
-0.10	4.5-6.0	Low----------	0.17	
-0.20	4.5-5.5	Low----------	0.37	4
-0.19	4.5-5.5	Moderate-------	0.28	
-0.18	4.5-5.5	Low----------	0.28	
-0.15	3.6-5.5	Low----------	0.28	4
-0.19	3.6-5.5	Low----------	0.32	
-0.15	3.6-5.5	Low----------	0.32	
-0.10	4.5-6.0	Low----------	0.15	3
-0.15	4.5-5.5	Low----------	0.24	
-0.15	4.5-6.5	Low----------	0.24	5
-0.20	4.5-6.5	Low----------	0.32	
--	---	----------	----	
-0.16	5.6-6.0	Low----------	0.43	3
-0.17	4.5-5.5	Very high------	0.37	
--	---	----------	----	
-0.16	4.5-6.0	Low----------	0.24	5
0.17	4.5-6.0	Low----------	0.24	
-	---	----------	----	

TABLE 18.--SOIL AND WATER FEATURES

'water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the
ymbol < means less than; > means more than. Absence of an entry indicates that the feature is
n]

	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
-	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High.
-	A	None--------	---	---	>6.0	---	---	>60	---	Low------	Low.
-	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
-	C	Frequent----	Brief-----	Nov-Apr	0.5-1.5	Apparent	Nov-Apr	>60	---	High-----	Moderate.
-	B	Frequent----	Brief-----	Nov-Apr	2.5-4.0	Apparent	Nov-Apr	>60	---	Moderate	Moderate.
-	C	None--------	---	---	1.5-2.0	Perched	Jan-Mar	>60	---	High-----	High.
-	B	None--------	---	---	3.0-5.0	Perched	Jan-Apr	>60	---	Moderate	Moderate.
-	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	Moderate.
-	B	None--------	---	---	4.0-6.0	Perched	Jan-Mar	>60	---	Low------	High.
-	C	None--------	---	---	1.5-2.5	Perched	Jan-Mar	>60	---	Moderate	High.
-	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate.
-	B	None--------	---	---	>6.0	---	---	>60	---	High-----	Moderate.
-	C	None--------	---	---	>6.0	---	---	40-60	Soft	Moderate	High.
-	B	None--------	---	---	>6.0	---	---	>60	---	High-----	High.
-	B	None--------	---	---	>6.0	---	---	20-40	Hard	Low------	High.
-	D	Frequent----	Brief-----	Nov-Jun	0-1.0	Apparent	Nov-May	>60	---	High-----	High.
-	B	None--------	---	---	4.0-6.0	Apparent	Dec-Jun	>60	---	Moderate	High.

TABLE 18.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Bedrock		Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness	Uncoated steel	Concrete
					Ft			In			
TaB, TaD, TaE----- Tatum	C	None--------	---	---	>6.0	---	---	40-60	Soft	High-----	High.
ToB---------- Tetotum	C	Rare--------	---	---	1.5-2.5	Apparent	Dec-Apr	>60	---	High-----	High.
Ud. Udorthents											
Ur. Urban land											
VaB, VaD, VaE----- Vaucluse	C	None--------	---	---	>6.0	---	---	>60	---	Low------	High.
Wn---------- Wehadkee	D	Frequent----	Brief-----	Nov-Jun	0-2.5	Apparent	Dec-May	>60	---	High-----	Moderate.
WsB, WsD---------- White Store	D	None--------	---	---	1.0-1.5	Perched	Dec-Mar	48-72	Soft	High-----	High.
WwB---------- Wickham	B	None--------	---	---	>6.0	---	---	>60	---	Moderate	High.

TABLE 19.--ENGINEERING INDEX TEST DATA

[Dashes indicate data were not available. NP means nonplastic]

Soil name, sample number, horizon, and depth (in inches)	Classification		Grain-size distribution							Liquid limit	Plasticity index	Moisture density	
	AASHTO	Unified	Percentage passing sieve--				Percentage smaller than--					Maximum dry density	Optimum moisture
			No. 4	No. 10	No. 40	No. 200	.02 mm	.005 mm	.002 mm				
										Pct		Lb/cu ft	Pct
Mayodan fine sandy loam: [S80N C-105-16 (1-4-7)]													
Ap - - - - - - - 0-7	A-4(7)	ML	100	100	99	70	21	9	6	22	NP	107.2	14.5
Bt - - - - - - - 14-32	A-7-6(16)	CL	100	100	100	82	56	43	38	49	25	103.0	20.4
C - - - - - - - 51-60	A-6(7)	ML	100	100	99	70	45	28	21	40	11	109.0	16.9
Pinkston fine sandy loam: [S80NC-105-18 (1-3-4)]													
A - - - - - - - 0-3	A-4(3)	ML	69	66	65	51	19	8	5	28	1	106.9	15.0
Bw - - - - - - - 14-24	A-4(7)	ML	99	97	96	72	32	19	14	26	4	112.6	13.7

CLASSIFICATION OF THE SOILS

Family or higher taxonomic class
thermic Arenic Hapludults
thermic Arenic Paleudults
, thermic Typic Hapludults
thermic Fluvaquentic Dystrochrepts
nonacid, thermic Typic Udifluvents
rmic Aquic Hapludults
ous, thermic Plinthic Paleudults
ous, thermic Typic Hapludults
thermic Arenic Plinthic Paleudults
, thermic Aquic Hapludults
rmic Typic Hapludults
rmic Typic Hapludults
, thermic Typic Hapludults
d, thermic Ruptic-Ultic Dystrochrepts
rmic Typic Ochraquults
thermic Typic Hapludults
rmic Typic Hapludults
thermic Aquic Hapludults
ous, thermic Typic Hapludults
nonacid, thermic Typic Fluvaquents
ic Vertic Hapludalfs
thermic Typic Hapludults

See text for a description of those characteristics of the

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